

**TERMINAL BLOCKS**

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Report: SAF.TR.08.315

Scope: Electric Safety

Date: March, 26th 2008

Equipment: Terminal Blocks

Model Type: See below

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1. IDENTIFICATION

Generality

Equipment:	Motor Terminals
Manufacturer:	F.I.A.M.E S.r.l.

Identification

Identification number:	SEE BELOW
Date of arrival:	2008-03-20

Supply

Rated voltage (V)	600
Rated current (A)	16/25
Rated frequency (Hz)	50/60
Rated temperature (°C)	20 to 150

Dimensions

Length (cm)	—
Width (cm)	—
Height (cm)	—
Weight (Kg)	—

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Type description

Composed of Thirty-six terminal blocks with different shape and different number of poles.

Type	Material	N. Poles	D. Poles	Dimensions L x W x D (mm)
40.25	PF-2736	6	M 4	40 x 26 x 16
50.32	PF-2736	6	M 4	50 x 32 x 7
50.32	MP-183	6	M 4	50 x 32 x 10,5
56.36	PF-2736	6	M 5	56 x 36 x 8
70.45	PF-2736	6	M 6	70 x 45 x 8
82.52	PF-2736	6	M 6	82 x 52 x 11
82.52	PF-2736	6	M 8	82 x 52 x 12
95.60	PF-2736	6	M 8	95 x 60 x 13
95.60	PF-2736	6	M 10	95 x 60 x 11
115.70	PF-2736	6	M 8	115 x 70 x 14
115.70	PF-2736	6	M 10	115 x 70 x 13
125.80	PF-2736	6	M 12	125 x 80 x 17
145.90	PF-2736	6	M 14	145 x 90 x 20
165.100	PF-2736	6	M 16	165 x 100 x 27
240.150	PF-2736	6	M 20	240 x 150 x 26
40.16	PF-2736	2	M 4	40 x 16 x 7,4
50.40	PF-2736	8	M 4	50 x 40 x 16
38.30	PF-2736	4	M 4	38 x 30 x 7
32.32	PF-2736	4	M 4	32 x 32 x 5
64.46	PF-2736	12	M 4	64 x 46 x 8
72.52	PF-2736	12	M 5	72 x 52 x 9
90.65	PF-2736	12	M 6	90 x 65 x 13
50.50	PF-2736	9	M 4	50 x 50 x 17
65.65	PF-2736	9	M 6	65 x 65 x 10
52.52	PF-2736	9	M 5	52 x 52 x 3
50.40	PF-2736	9	M 4	50 x 40 x 6
62.45	PF-2736	9	M 5	62 x 45 x 6
40.40	PF-2736	8	M 4	40x 40 x 6
54.34	PF-2736	6	M 4	54 x 54 x 8
64.40	PF-2736	6	M 5	64 x 40 x 10



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39.39	PF-2736	4	M 5	39 x 39 x 5
71.30	PF-2736	2+3	M 4+M 6	71 x 30 x 8
124.17	PF-2736	6	M 5	124 x 17 x 8
80.27	PF-2736	3	M 6	80 x 27 x 12



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2. LIST OF THE APPLIED STANDARDS

European References	Scope
EN 60335-1 (2002) EN 60335-1/A1 (2004) EN 60335-1/A11 (2004)	<i>Household and similar electrical appliances – Safety Part 1: General Requirements</i>

Notes:

Only verifications of section 30.2 – Resistance to heat and fire has been performed

The terminal blocks have been evaluated for use in appliance that can be operated while unattended (worst condition).

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3. CHECK LIST

Captions: P = Pass; F = Fail; N = Not Applicable; NCH = Not checkable; NCD = Not checked

Clause	Requirement / Test	Result / Remark	Verdict
30.	RESISTENCE TO HEAT AND FIRE		—
30.1	External parts of non-metallic material,		NCD
	parts supporting live parts, and		NCD
	thermoplastic material providing supplementary or reinforced insulation,		NCD
	sufficiently resistant to heat		NCD
	Ball-pressure test according to IEC 60695-10-2	(see appended table)	NCD
	External parts: at 40 °C plus the maximum temperature rise determined during the test of clause 11, or at 75 °C, whichever is the higher; temperature (°C)..... :		NCD
	Parts supporting live parts: at 40°C plus the maximum temperature rise determined during the test of clause 11, or at 125°C, whichever is the higher; temperature (°C)..... :		NCD
	Parts of thermoplastic material providing supplementary or reinforced insulation, 25°C plus the maximum temperature rise determined during clause 19, if higher; temperature (°C)..... :		NCD
30.2	Relevant parts of non-metallic material adequately resistant to ignition and spread of fire	(see appended table)	P
30.2.1	Glow-wire test of IEC 60695-2-11 at 550 °C, unless		N
	the material is classified at least HB40 according to IEC 60695-11-10		N
	Parts for which the glow-wire test cannot be carried out meet the requirements in ISO9772 for category FH3 material		N
	Parts for which the glow-wire test cannot be carried out meet the requirements in ISO9772 for category HBF material		N

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30.2.2	Appliances operated while attended, parts of insulating material supporting current-carrying connections and parts within a distances of 3mm subjected to the glow-wire test of IEC 60695-2-11 at a temperature of:		—
	- 750°C, for connections carrying a current exceeding 0,5A during normal operation		N
	- 650°C, for other connections		N
	Test not applicable to conditions as specified		N
30.2.3	Appliances operated while unattended, tested as specified in 30.2.3.1 and 30.2.3.2		P
	Test not applicable to conditions as specified		N
30.2.3.1	Parts of insulating material supporting connections carrying a current exceeding 0.2A during normal operation, and		P
	parts of insulating material within a distance of 3mm,		N
	having a glow-wire flammability index of at least 850°C according to IEC 60695-2-12		P
30.2.3.2	Parts of insulating material supporting current-carrying connections, and		P
	parts of insulating material within a distance of 3mm,		N
	subjected to glow-wire test of IEC 60695-2-11		P
	Test not carried out on material having a glow-wire ignition temperature according to IEC 60695-2-13 as specified		P
	Glow-wire test of IEC 60695-2-11, the temperature being:		—
	-750°C, for connections carrying a current exceeding 0,2A during normal operation		N
	-650°C, for other connections		N
	Parts that during the test produce a flame persisting longer than 2 s, tested as specified		N
	If a flame persists longer than 2 s during the test, parts above the connection, as specified, subjected to the needle-flame test of annex E, unless		N
	the material is classified as V-0 or V-1 according to IEC 60695-11-10		N

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30.2.4	Base material of printed circuit boards subjected to needle-flame test of annex E		N
	Test not applicable to conditions as specified		N

E	ANNEX E (NORMATIVE) NEEDLE-FLAME TEST		
	Needle-flame test carried out in accordance with IEC 60695-2-2, with the following modifications:		P
5	Severities		P
	The duration of application of the test flame is 30 s ± 1 s		P
8	Test procedure		P
8.2	The specimen so arranged that the flame can be applied to a vertical or horizontal edge as shown in the examples of figure 1		P
8.4	The first paragraph does not apply		P
	If possible, the flame is applied at least 10 mm from a corner		P
8.5	The test is carried out on one specimen		P
	If the specimen does not withstand the test, the test may be repeated on two further specimens, both withstanding the test		N
10	Evaluation of test results		P
	The duration of burning not exceeding 30 s		N
	However, for printed circuit boards, the duration of burning not exceeding 15 s		N

O	ANNEX O (INFORMATIVE) SELECTION AND SEQUENCE OF THE TESTS OF CLAUSE 30		
	Description of tests for determination of resistance to heat and fire		P

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Fire resistance

Ref.	Part	Test device	Applied force	Temp. (°C)	Length (min)	Verdict
30.2.3.1	40.25	Glow-wire	1N	850	0.5	P
30.2.3.1	50.32	Glow-wire	1N	850	0.5	P
30.2.3.1	50.32	Glow-wire	1N	850	0.5	P
30.2.3.1	56.36	Glow-wire	1N	850	0.5	P
30.2.3.1	70.45	Glow-wire	1N	850	0.5	P
30.2.3.1	82.52	Glow-wire	1N	850	0.5	P
30.2.3.1	82.52	Glow-wire	1N	850	0.5	P
30.2.3.1	95.60	Glow-wire	1N	850	0.5	P
30.2.3.1	95.60	Glow-wire	1N	850	0.5	P
30.2.3.1	115.70	Glow-wire	1N	850	0.5	P
30.2.3.1	115.70	Glow-wire	1N	850	0.5	P
30.2.3.1	125.80	Glow-wire	1N	850	0.5	P
30.2.3.1	145.90	Glow-wire	1N	850	0.5	P
30.2.3.1	165.100	Glow-wire	1N	850	0.5	P
30.2.3.1	240.150	Glow-wire	1N	850	0.5	P
30.2.3.1	40.16	Glow-wire	1N	850	0.5	P
30.2.3.1	50.40	Glow-wire	1N	850	0.5	P
30.2.3.1	38.30	Glow-wire	1N	850	0.5	P
30.2.3.1	32.32	Glow-wire	1N	850	0.5	P
30.2.3.1	64.46	Glow-wire	1N	850	0.5	P



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30.2.3.1	72.52	Glow-wire	1N	850	0.5	P
30.2.3.1	90.65	Glow-wire	1N	850	0.5	P
30.2.3.1	50.50	Glow-wire	1N	850	0.5	P
30.2.3.1	65.65	Glow-wire	1N	850	0.5	P
30.2.3.1	52.52	Glow-wire	1N	850	0.5	P
30.2.3.1	50.40	Glow-wire	1N	850	0.5	P
30.2.3.1	62.45	Glow-wire	1N	850	0.5	P
30.2.3.1	40.40	Glow-wire	1N	850	0.5	P
30.2.3.1	54.34	Glow-wire	1N	850	0.5	P
30.2.3.1	64.40	Glow-wire	1N	850	0.5	P
30.2.3.1	39.39	Glow-wire	1N	850	0.5	P
30.2.3.1	71.30	Glow-wire	1N	850	0.5	P
30.2.3.1	124.17	Glow-wire	1N	850	0.5	P
30.2.3.1	80.27	Glow-wire	1N	850	0.5	P

Captions: P = Pass; F= Fail

Notes:

Measurement uncertainty	Date	Climatic conditions	Test operator
± 2 °C	---	Temperature (°C) 23 ± 2 Relative umidity (%) 50 ± 20	